Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of)	
)	
Revision of the Commission's Rules to)	CC Docket No. 94-102
Ensure Compatibility with Enhanced 911)	
Emergency Calling Systems)	
)	
Request for Waiver by Verizon Wireless)	

To: The Commission

SUPPLEMENT TO
VERIZON WIRELESS'S PETITION FOR RECONSIDERATION

On November 13, 2001, Verizon Wireless filed a petition with the Commission

for reconsideration of certain conditions of its *E911 Deployment Waiver Order*. Part of

the petition addressed the interim, EFLT solution and asked the Commission to conform

the *Waiver Order* with the information provided in the record regarding that solution.[1]

Verizon Wireless also filed reply comments noting that the petition's request for

modification of the EFLT conditions was unopposed.[2] The *Waiver Order* imposed an

affirmative obligation on Verizon Wireless to provide the Commission with additional

information, including notice of anticipated issues for compliance, which arise between

the deadlines for filing quarterly status reports.[3] The FCC has not yet acted on the issues

raised in Verizon Wireless's petition and comments. Because Verizon Wireless's next

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[1]   *See* Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, *Order*, CC Docket No. 94-102, FCC 01-299 (rel. October 12, 2001) ("*E911 Deployment Waiver Order*" or "*Waiver Order*").
[2]   Reply Comments of Verizon Wireless, filed January 4, 2002, at 2.

status report is not due until May 1, and a decision correcting the interim EFLT waiver conditions raised in the petition for reconsideration remains pending, Verizon Wireless hereby files this supplement updating the record in this proceeding.

Specifically, Verizon Wireless renews its request for correction of the EFLT requirements and modifies that request as outlined herein. As Verizon Wireless explained in its petition for reconsideration, the Commission erred in the *Waiver Order* when it required Verizon Wireless to deploy the interim EFLT solution in both Lucent and Nortel markets by April 1, 2002, with a 250-350 meter accuracy range. In the petition for reconsideration, Verizon Wireless urged the FCC to change two aspects of the *Waiver Order* regarding the EFLT solution: 1) to conform the deployment deadline for the EFLT solution in Nortel markets with the underlying waiver petition and 2) to remove the 250-350 meter accuracy range.[4]

The purpose of this filing is to apprise the Commission of Verizon Wireless's progress toward implementing EFLT.[5] <u>First</u>, this filing requests a revised EFLT deployment deadline of March 31, 2003 for completing deployment in all Nortel switches based on information obtained from Nortel regarding the development of its EFLT solution. <u>Second,</u> Verizon Wireless renews its request to eliminate the accuracy requirement in recognition of technical limitations and the way the technology will actually work in the network to improve upon Phase I location data in some cases. The

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[3]   *Waiver Order* at ¶ 32.

[4]   Verizon Wireless petition for reconsideration at 12-13.

[5]   Verizon Wireless has completed deployment of EFLT on schedule in Lucent markets by April 1, 2002. Details of this effort will be outlined in the upcoming May 1, 2002, Quarterly Status Report and were presented to the FCC's staff during an *Ex Parte* meeting. *See Ex Parte Letter* filed by Verizon Wireless, March 22, 2002.

250-350 meter accuracy range for EFLT-estimated location data is not technically feasible and is not supported in the record. If the Commission refuses to remove the accuracy requirement, it should remove the obligation to deploy EFLT altogether.

I.   BACKGROUND

Although not required by FCC rules, Verizon Wireless proposed to evaluate a promising software enhancement – an EFLT solution that could provide enhanced location capabilities under certain conditions to legacy, non-GPS-capable, CDMA mobiles. At the time of Verizon Wireless' waiver request, EFLT was being developed by a single vendor; it appeared promising in preliminary laboratory tests but had not undergone rigorous field-testing with a carrier. Verizon Wireless proposed to implement this technology pending a successful testing outcome.

After Verizon Wireless selected Compaq as its position determining equipment ("PDE") provider, it requested that Compaq immediately develop an EFLT solution for its PDE product, which works in conjunction with the switch software. Both switch and PDE network components must have EFLT capability for the technology to operate. Similarly, discussions were underway to ascertain Nortel's ability to provide an EFLT product for its switches. At the time, it was Verizon Wireless' understanding that Nortel would be able to develop EFLT for deployment in Verizon Wireless's network by August 1, 2002.

The *Waiver Order* converted Verizon Wireless's conditional proposal to further test and deploy EFLT depending upon the outcome of such testing into an affirmative,

binding requirement regardless of the testing.[6]   Verizon Wireless's petition for reconsideration did not seek removal of this binding obligation, but rather requested elimination of the technical 250-350 meter accuracy range imposed and correction of the timetable for deployment in Nortel markets from April to August.

II.   THE EFLT SOLUTION IS ONLY AN INTERIM SUPPLEMENT, NOT A COMPLETE PHASE II SOLUTION

The EFLT solution must be considered in its proper context. EFLT was not proposed as an alternative that would meet the Phase II accuracy requirements as defined by the FCC's rules, nor was it proposed as a solution that would be required to meet a specific accuracy range. EFLT is being used in the network as a supplement that *may* provide location data on legacy CDMA mobiles that is more accurate than Phase I cell/sector information.

When EFLT is not in a Phase II network environment (or the feature is off), the mobile positioning center ("MPC") will not task the PDE to find the caller when an emergency call is made from a legacy, non-GPS, CDMA mobile. Instead, the MPC will provide the latitude and longitude assigned to the serving cell/sector to the PSAP. Absent EFLT, the PSAP will always be provided with Phase I data for legacy mobiles. The usefulness of such Phase I data depends on how far the caller is from the cell site.

In Phase II markets, with the addition of EFLT functionality in the network, the MPC will task the PDE to be engaged in finding the caller. The PDE will estimate the mobile's position based on the serving cell site's position <u>and</u> also request EFLT measurements from the handset via the MSC and use the response to compute a location.

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[6]   *Waiver Order* at ¶ 44.

The PDE will mathematically estimate the "uncertainty value" or error for both location methodologies.[7] The PDE will compare the two uncertainty values and report the <u>better</u> location information, plus the uncertainty value, to the MPC.[8] The network design is such that it will not transmit EFLT information to the PSAPs unless it shows estimated improvements upon Phase I location information.

Prescribing a technical 250-350 meter requirement for EFLT ignores the purpose of this supplemental technology and the important, but limited, utility it provides for locating legacy mobiles. There will be times when an EFLT-estimated location exceeds 250-350 meters but is still a beneficial tool. For example, for some situations where cell sites are spaced out by miles, location information exceeding 250-350 meters may nevertheless provide much more useful information to the PSAPs than Phase I. The FCC's policies and waiver conditions should not discourage carriers and vendors from making enhancements over Phase I – for fear of enforcement actions and penalties if the enhancements do not meet rigid accuracy requirements that only make technical sense for, and could only lawfully apply to, complete Phase II technologies.[9]

Verizon Wireless's petition for reconsideration challenged the Waiver Order's imposition of the 250-350 meter EFLT accuracy standard because there was no evidence

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[7]   The uncertainty value is expressed in meters and is used by the PDE to decide which data to pass to the MPC.

[8]   In some cases, PSAPs with certain CPE capabilities will be able to see the estimated uncertainty value associated with the location data they receive from the MPC. This method of presenting location data with an uncertainty estimate is helpful because it makes the data provided by any location technology more useful to the PSAP. In some cases, positions reported by the PDE can be further screened for uncertainty by the MPC before that position is passed to the PSAP as an additional quality check on the data.

[9]   Verizon Wireless is currently working to deploy the AGPS/AFLT Phase II solution as well.

to support that mandate.[10]   For the reasons described herein, the removal of the accuracy requirement is also needed for reasons of technical infeasibility.   The testing Verizon Wireless has conducted with the Compaq PDE and Lucent switches does not support a rigid accuracy range.

A minimum of two EFLT measurements is required to locate a caller. The availability of additional measurements improves the technology's accuracy.   The inherent limiting factor for EFLT performance is the low availability of EFLT measurements from legacy CDMA handsets. Low availability may occur because the network and existing handsets are designed to enhance two key wireless network features necessary for voice communication: signaling protocols and handoff parameter settings. For example, handoff parameter settings are selected to optimize handoff performance for voice communication, not to optimize available measurements for EFLT position calculations.[11]   Given these technical limitations, Verizon Wireless cannot prescribe an accuracy range that is reliably achievable for the varying call scenarios.   The accuracy and uncertainty associated with a given EFLT measurement will be established in the network for each individual call.

EFLT can provide improved location accuracy as a supplement to Phase I location technology for legacy CDMA mobiles; it does not provide Phase II accuracy, nor was it ever intended to. As explained above, in those instances where the PDE determines that

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[10]   Verizon Wireless petition for reconsideration at 12.
[11]   The number of EFLT measurements captured by the legacy mobiles depends upon the number of pilot signals that are in the handset's Active and Candidate pilot sets. Thus, the number of EFLT measurements depends on both the local signal environment and on the values of the handset's handoff parameters.   Although AFLT operates similarly to EFLT, the advantage of AFLT is that the AGPS/AFLT capable handsets contain hardware and software that provide additional and more accurate measurements.

the EFLT data is better, the network will pass EFLT data to the PSAPs. In other instances where cell and sector information is most accurate or reliable, the network will pass Phase I data to the PSAPs. The uncertainty of the network with a given EFLT fix will be determined on a call-by-call basis.

The FCC should remove the rigid 250-350 meter accuracy requirement and allow Verizon Wireless to proceed with its deployment plans unfettered by an unachievable target. Otherwise, the FCC's Waiver Order places Verizon Wireless in the untenable position of being required to deploy a technology under conditions that are legally improper and technically unjustified. If the Commission declines to remove the arbitrary accuracy requirement, it should remove the obligation to deploy EFLT altogether.

III.   ADDITIONAL TIME IS REQUIRED TO DEPLOY EFLT IN NORTEL MARKETS

Nortel has committed to late July, 2002 as the earliest date to begin testing the newly developed EFLT solution designed for Nortel infrastructure in a first office application ("FOA"). As such, Nortel expects to complete deployment by late September in _most_ markets. Because of additional technical issues Nortel has identified in some of its switches, Verizon Wireless expects to _complete_ deployment of EFLT in all Nortel markets by the end of the 1Q2003. Attached to this pleading is a redacted letter from Nortel attesting to the current stage of development and available testing and deployment timelines. Nortel's letter makes clear the complexity of developing EFLT functionality.[12] Nortel has committed to what it describes as an "aggressive" schedule with "compressed"

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[12]   Nortel also states that it has concerns regarding the 250-350 meter accuracy requirement. _Letter_ at 3.

design and test intervals wherein the normal feature validation period is shortened and several activities will be combined.

Given the possibility for delay or slippage with such an aggressive schedule, Verizon Wireless requests additional time to complete deployment of EFLT in Nortel markets. Specifically, Verizon Wireless requests a March 31, 2003 deadline for all Nortel switches. Verizon Wireless will update the Commission if Nortel is able to adhere to its aggressive schedule and can complete deployment any sooner. Verizon Wireless's proven commitment to E911 as exhibited by successfully meeting other deployment benchmarks imposed by the *Waiver Order* demonstrates the necessity of this request and the company's intention to work aggressively with Nortel to meet any revised waiver conditions.[13]

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[13] *See*, *e.g.*, Verizon Wireless February 1, 2002 Quarterly Status Report and March 22, 2002 *Ex Parte Letter*.

IV. CONCLUSION

For the reasons provided above, the FCC should: (1) remove the 250-350 accuracy range for deploying EFLT in Verizon Wireless's network or revoke the obligation to deploy EFLT altogether, and (2) modify the deadline for completing EFLT deployment in all Nortel switched markets until March 31, 2003.

Respectfully submitted,

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Certificate of Service

I hereby certify that on this 9th day of April copies of the foregoing "Supplement to Verizon Wireless's Petition for Reconsideration" in CC Docket 94-102 were sent by first class mail to the following parties:

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